

SPECIFICATION AMENDMENTS

At page 1, after the title, insert the following:

FIELD OF THE INVENTION

At page 1, replace paragraph [0001] with:

[0001] The invention concerns an ~~electrohydrodynamic superposition electro-~~
~~hydrodynamic superimposed~~ steering system ~~in accordance with Claim 1.~~

At page 1, after paragraph [0001], insert the following:

BACKGROUND OF THE INVENTION

At page 2, after paragraph [0006], insert the following:

SUMMARY OF THE INVENTION

At page 2, replace paragraphs [0007] and [0008] with:

[0007] The ~~problem~~ object of the invention is to provide a steering unit for tracklaying vehicles or wheel vehicles with wheel-side steering, which has a small overall size and a low overall weight and permits dual or multiple circuits.

[0008] This ~~problem~~ object is achieved by ~~is solved in accordance with~~ the invention by ~~the features of Claim 1.~~

At page 2, replace paragraph [0013] with:

[0013] Additional features and advantages ~~can be deduced from the subordinate claims in connection with the description. The features of the invention under consideration are explained in more detail below with the aid of preferred embodiments; the figures show the following in the pertinent schematic drawings shown in the drawings, of which:~~

At page 2, after paragraph [0013], insert the following:

BRIEF DESCRIPTION OF THE DRAWINGS

At pages 2-3, replace paragraphs [0014] to [0017] with:

[0014] ~~Figure~~ FIGURE 1, ~~shows~~ a first embodiment in accordance with the invention, with an electric motor directly coupled to the zero shaft;

[0015] ~~Figure~~ FIG. 2 represents another embodiment example with an electric motor, which drives the zero shaft via a planetary gear stage;

[0016] ~~Figure FIG. 3 shows~~ concerns an embodiment in which the zero shaft is conducted past outside the steering gear;

[0017] Figure FIG. 4 shows an embodiment with only one hydrodynamic coupling and mechanical couplings for the two rotation directions of the zero shaft.

At page 3, after paragraph [0017], insert the following:

DETAILED DESCRIPTION OF THE EMBODIMENTS

At page 3, replace paragraph [0018] with:

[0018] Figure FIG. 1 shows a first embodiment in accordance with the invention, with a drive system 1, for example, consisting of a motor acting on the driven shafts 11, via an engaging and disengaging gear and steering differentials 9. The driven shafts 11 can be coupled to chain wheels to drive caterpillar tracks, for example, via step-down gears, so-called side reduction gears. Instead of with chain wheels, the driven shafts 11 can also be connected with the wheels of wheel vehicles.

At page 3, replace paragraph [0021] with:

[0021] The electric motor 2 is preferably executed with a dual or a multiple circuit—that is, the motor is provided with two or more electric windings, independent of one another, or the electric driving power is produced by two or more electric motors. If one circuit or one of the motors fails, another is always still able to function, so as to be able to drive the zero shaft 10. The electric drive can be mechanically coupled directly to the zero shaft 10 without a step-up stage. To minimize the space taken by the steering system, the power electronics 21 and steering electronics 22 may be mounted on the gem box housing the steering unit 20.

At page 4, replace paragraph [0025] with:

[0025] In the embodiment example shown in Figure FIG. 1, the first hydrodynamic coupling 4 is directly connected to the zero shaft 10 and the other hydrodynamic coupling 6, which is driven via the drive wheel 3 in the same direction of rotation as the first one, is coupled via a reversing gear 19 with a transmission ratio $i = -1$ to the zero shaft 10.

At pages 4-5, replace paragraph [0030] to [0032] with:

[0030] The essential core of the invention consists in driving a steering unit for track keying vehicles or wheeled vehicles with nonpivoting wheels by means of a relatively small-dimensioned electric motor, with a steering system which is branched off from the drive

system. By means of this drive combination, a thus equipped vehicle exhibits very precise steering behavior, especially around the steering wheel zero position. Advantageously, the electric power requirement is thereby substantially lower in comparison with a purely electric drive of the zero shaft, even with a high steering power requirement (maximum value when rotating about the vertical axis). The electric drive power to be installed, which is kept comparatively low due to the arrangement in accordance with the invention, can be made part of a vehicle concept, for example, by an increase of the starter motor or by "power sharing" with other electrical loads, without a considerable increase in total structural volume. Furthermore, a steering drive in accordance with the invention can be designed with a ~~multiple circuit; with~~ separate electric and hydraulic circuits.

[0031] The version shown in ~~Figure~~ FIG. 2 essentially corresponds to the one described according to ~~Figure~~ FIG. 1, wherein the electric motor 2' is designed with a different rpm for the zero shaft, and for this reason, additionally requires a correspondingly designed step-up stage 12, preferably a planetary gear stage. In this way, structural space can be economized, once again with a corresponding design of the electric motor 2'.

[0032] Figure FIG. 3 shows an embodiment example with a zero shaft 10', running past the steering gear on the outside. This arrangement of the zero shaft 10' can be necessary, due to the particular type of vehicle, so as to adapt the superposition revolutions to the steering differentials 9. The electric motor 2 can drive the zero shaft 10' via a toothed gear train 17, where as with the other embodiment examples, the electric motor 2 can be controlled with respect to the direction of rotation and the rpm.

At pages 5-6, replace paragraph **[0034]** to **[0037]** with

[0034] Figure FIG. 4 shows an embodiment with only one hydrodynamic coupling 13 and two mechanical couplings 15, 16 for the two directions of rotation of the zero shaft 10. The electric motor 2 drives the zero shaft 10 directly, analogous to the version according to Figure FIG. 1. The single hydrodynamic coupling 13 is driven via a drive wheel 3 by the drive system 1 and can transfer the drive power to the zero shaft 10, via the mechanical couplings 15 or 16, wherein a reversing gear 19 is provided for the reversal of the direction of rotation. A bridging coupling 14 can be provided for the bridging of the hydrodynamic coupling 13.

[0035] Thus, for the application of greater steering power, the corresponding mechanical coupling 15 or 16 ~~must~~ should simultaneously be acted on, in addition to the hydrodynamic coupling 13, so as to steer the vehicle to the right or left. To circumvent the hydrodynamic slip, or in case of a breakdown of the hydrodynamic coupling 13, the bridging coupling 14

can transfer the proportion of steering power contributed by the drive system 1 to the steering couplings 15, 16.

[0036] With regard to the operational safety of the steering drive with a multiple circuit, the versions according to Figures FIGS. 1-3 appear to be more sensible advantageous.

[0037] In all arrangements in accordance with the invention, it is also possible to provide correspondingly controllable, load-switching mechanical couplings, such as multiple-disk clutches, instead of the hydrodynamic couplings 4, ~~7~~ 6, 13. With such embodiments, the bridging couplings 5, 7, 14 could also be dispensed with.

Delete page 7.

Reference-symbols

- ~~1~~ — Drive system
- ~~2, 2'~~ — Electric motor
- ~~3~~ — Drive wheel
- ~~4~~ — Hydrodynamic coupling
- ~~5~~ — Bridging coupling
- ~~6~~ — Hydrodynamic coupling
- ~~7~~ — Bridging coupling
- ~~8~~ — Intermediate gear wheel
- ~~9~~ — Steering differential
- ~~10, 10'~~ — Zero shaft
- ~~11~~ — Driven shaft
- ~~12~~ — Step-up stage
- ~~13~~ — Hydrodynamic coupling
- ~~14~~ — Bridging coupling
- ~~15~~ — Coupling
- ~~16~~ — Coupling
- ~~17~~ — Toothed wheel
- ~~18~~ — Toothed wheel
- ~~19~~ — Reversing gear